

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/736,465 Confirmation No. 3466  
Applicant : Jason Eubanks et al.  
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Art Unit : 3671  
Examiner: : Alicia M. Torres

Docket (atty ref.) No. : 16352-US  
Title : MOWING IMPLEMENT ROTARY DISC CUTTER BAR  
USED TOGETHER WITH A CROP-LIFTING  
ARRANGEMENT

Moline, IL 61265

20 January 2005

Commissioner for Patents  
P. O. Box 1450  
Alexandria VA 22313-1450

**APPEAL BRIEF**

**Real Party in Interest**

The real party in interest is Deere & Company to which all rights in this application was assigned by applicants per the assignment document recorded in the United States Patent and Trademark Office on 12/15/2003 at REEL/FAME: 014826/0256.

**Related Appeals and Interferences**

There are no related appeals or interferences.

**Status of Claims**

Claims 1-10 are currently pending in the above-identified application.

Claims 1, 7 and 8 stand rejected.

Claims 2-6, 9 and 10 stand objected to.

This appeal is from the rejection of claims 1, 7 and 8. A copy of these claims is set forth in the attached Appendix.

### **Status of Amendments**

A first amendment, filed 10 August 2004, and containing an amendment to claim 1, was entered in its entirety and considered in the Final Rejection, dated 11/02/2004.

### **Summary of the Invention**

The present invention relates to a mowing implement equipped with a rotary disc cutter bar having a gear housing extending transversely, relative to a forward direction of travel during mowing operation, and including a plurality of transversely spaced, knife-carrying rotary discs mounted, and being respectively driven, for rotating in desired directions above an upper surface of the gear housing for cutting and delivering crop into a discharge zone at the rear of the cutter bar. A crop processing device is located in the discharge zone just downstream from the cutter bar. A crop-lifting arrangement is located for directing cut crop, delivered by the cutter bar, so as to be in a favorable location for engagement by the crop processing device.

Specifically, referring now to FIGS. 1-3, there is shown a mowing implement platform 10 embodying an elongate rotary disc cutter bar 40 disposed transversely to a direction of travel of the platform and including a plurality of cutting units 62 spaced in side-by-side relationship to each other across the length of a gear housing 46 of the cutter bar 40. Power for driving respective cutting discs 64 of the cutting units 62 is transferred through a train of spur gears located within the gear housing and including a drive gear 54 coupled for driving a respective cutting disc 64, and idler gears 52 for transmitting power between the drive gears.

Located in a central region between opposite sides of the platform 10 and behind the cutter bar 40 is a crop conditioner arrangement 25, here shown as a roll conditioner including upper and lower ribbed conditioner rolls 66 and 68, which are counter-rotated so as to feed cut crop between them with the ribs on the rolls acting

to condition the crop as it passes through. The conditioner rolls 66 and 68 each have a length which is considerably shorter than the cutting width of the cutter bar 40, and thus the crop cut by the cutting units 62 located outwardly of the opposite ends of the conditioner rolls 66 and 68 are rotated so as to deliver cut crop inwardly to a centrally located discharge zone which is just in front of the conditioner rolls. To aid in narrowing the crop flow, a set of three converging drums 80, 84 and 88 are provided at the right -and side of the platform, and a set of three converging drums 82, 86 and 90 are provided on the left-hand side of platform.

The present invention resides in a crop-lifting arrangement 92 mounted to the cutter bar 40 at a location just upstream of, and for the purpose of lifting cut crop to a more favorable position for being fed into, the conditioner assembly 25.

Referring also to FIGS. 4 and 5, it can be seen that the crop-lifting arrangement includes a plurality of lifting units 94 that are respectively mounted to a plurality of tabs 96 projecting upward from the top edge of an upright leg of a mounting member 44 fixed to the rear of the gear housing 46. The tabs 96 are each located between an adjacent pair of the cutting discs 64 of the center cutting units 62, i.e., those cutting units located directly in front of the conditioner assembly 25, so as to be out of the path of rotation of the cutting knives carried by the cutting discs 64. Each of the lifting units 94 includes a generally triangular ramp 98 joined to and bent at, a right-angle to an elongate, generally rectangular lip section 100, with the lip sections 100 of adjacent lifting units 94 cooperating to form an upright lip that extends approximately the entire width of the discharge passage having a width commensurate with that of the conditioning assembly 25.. Opposite sides 102 and 104 of each ramp 98 are curved at a radius about the respective axes of rotation of adjacent ones of the cutting discs 64, with the radius being slightly larger than that of the distance from the axis to a tip of one of the cutting disc knives. The opposite sides 102 converge forward to a nose 106 which engages a planar top location of the gear housing 46, which location is approximately equidistant from the axes of rotation of the adjacent cutting discs 64.

During mowing operation, cut crop carried to the rear by the cutting discs 64 of the inner and central cutting units 60 and 62, respectively, will be prevented from feeding below and becoming wedged below the conditioner arrangement 25 by the crop-lifting arrangement 92. Specifically, as crop is conveyed across the cutter bar 40 toward the conditioner arrangement 25, the crop travels over the top, as well as

between, the discs 64. The crop that travels in between adjacent discs 64, of those cutting units 62 that are directly forward of the conditioner rolls 66 and 68, engages the ramp 98 located there, the ramps 98 acting to lift the crop up to a favorable height for being engaged by, and fed between the conditioner rolls 66 and 68.

An alternate embodiment is shown in FIG. 6 wherein a crop-lifting arrangement 92' includes a plurality of crop-lifting units 94' respectively formed integrally with a plurality of gear housing modules 124. Each unit 94' includes an upright lip segment 130 having its opposite ends joined to right- and left-hand half ramp segments 132 and 134, respectively, with the ramp segments 132 and 134 of adjacent modules 124 cooperating with each other to form a complete ramp. Thus, it will be appreciated that the lip segments 130 and the ramp segments 132 and 134 cooperate to form the crop-lifting arrangement 92', which operates in the same manner as the crop-lifting arrangement 92.

#### Issue

1. Are claims 1, 7 and 8 unpatentable, based on 35 U.S.C. 102(b) as being anticipated by Scarnato et al. (U.S. Patent No. 3,673,779)?

#### Grouping of Claims

Claims 8 will stand or fall with claim 1.

Claim 7 is thought individually allowable.

#### Arguments as to the Issue

Claims 1, 7 and 8 stand rejected, based on 35 U.S.C. 102(b), as being anticipated by Scarnato et al. It is respectfully submitted that Scarnato et al. do not disclose the lip structure set forth in claim 1.

Specifically, among other structure, claim 1 requires a crop-lifting arrangement including a lip extending transversely across and projecting **substantially upright** from, at least a rear region of the cutter bar, located **just forward** of the crop processing device, and for the lip to extend **closely adjacent to** and to a height **above** a path traced by knives of the knife-carrying rotary discs.

Scarnato et al. disclose (FIG. 4) a cutter bar including box beam structure 160 forming a gear housing and including top and bottom walls 161 and 162, and front and rear walls 163 and 164. Forming a rearward extension of the bottom wall 162 is

a guide wall 170 which leads to the nip 125 established between upper and lower conditioner rolls 11 and 8, respectively.

It is clear that the guide wall 170 **does not extend upright** from the box beam structure 160, and in fact is almost coplanar with the bottom wall 162. While the Examiner contends that the guide wall 170 is just as upright as is the lip section 100 in FIG. 5, a simple measurement will show that the guide wall 170 makes an angle of approximately 20° with the horizontal while the lip 100 makes an angle of about 64° with the horizontal, a considerable difference. Further, It is clear that the guide wall 170 **does not extend closely adjacent** a path traced by knives of the knife-carrying discs.

For the reasons stated above, claim 1 is not thought anticipated by Scarnato et al.

Claims 7 and 8 depend directly from claim 1 and are likewise thought allowable

Claim 7 is thought allowable for the additional reason that it requires the lip to be inclined upwardly and forwardly at an angle of approximately 60° to the horizontal, and it is clear that the guide wall 170 of Scarnato et al. is angled upwardly to **the rear, not forwardly**, as claimed.

Accordingly, it is respectfully requested that the Examiner's rejection of claims 1, 7 and 8 be reversed.


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Respectfully,

  
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## APPENDIX

1. In combination with a mowing implement equipped with a rotary disc cutter bar having a gear housing extending transversely, relative to a forward direction of travel during mowing operation, and including a plurality of transversely spaced, knife-carrying rotary discs mounted, and being respectively driven, for rotating in desired directions above an upper surface of said gear housing for cutting and delivering crop into a discharge zone at the rear of the cutter bar, a crop processing device located in said discharge zone just downstream from said cutter bar, and a crop-lifting arrangement for directing cut crop delivered by said rotary discs upwardly and rearwardly from said cutter bar so as to be in a favorable location for engagement by said crop processing device, the improvement comprising: said crop-lifting arrangement including a lip extending transversely across, and projecting substantially upright from at least a rear region of said cutter bar located just forward of said crop processing device; and said lip extending closely adjacent to, and to a height above, a path traced by knives of said knife-carrying rotary discs.

7. The combination, as defined in claim 1, wherein said lip is inclined upwardly and forwardly at an angle of approximately 60° to the horizontal.

8. The combination, as defined in claim 1 wherein said lip is formed integrally with said gear housing.